

Claims

1. Gas-generating pyrotechnic composition comprising
a binder, a nitrogenous organic compound,
5 additives and an oxidizing filler comprising
ammonium perchlorate and a chlorine scavenger, the
said binder being a hydrocarbonaceous binder with
at least two components, one of the components
being composed of a gum, characterized in that,
10 when the gum is a polyester gum, it is used in
combination with a polyester resin and in that,
when the gum is an acrylic gum, it is used in
combination with one of its plasticizers.
- 15 2. Composition according to Claim 1, characterized in
that the plasticizer of the acrylic gum is chosen
from the group consisting of dioctyl adipate and
dioctyl azelate.
- 20 3. Composition according to Claim 1, characterized in
that, when the binder is composed of the combina-
tion of a polyester gum and of a polyester resin,
the composition additionally comprises a cross-
linking agent of isocyanate type.
- 25 4. Composition according to Claim 1, characterized in
that the content by weight of the fillers composed
of the nitrogenous organic compound, the additives

and the oxidizing filler is greater than or equal to 85% of the total weight of the composition.

5. Composition according to Claim 1, characterized in that the said chlorine scavenger is chosen from the group consisting of sodium nitrate, calcium carbonate, lithium carbonate, potassium nitrate, strontium nitrate, barium nitrate, potassium chlorate, potassium perchlorate and copper oxide.

6. Composition according to Claim 5, characterized in that the chlorine scavenger is sodium nitrate.

7. Composition according to Claim 1, characterized in that the said nitrogenous organic compound is chosen from the group consisting of nitroguanidine, guanidine nitrate, aminoguanidine nitrate, oxamide, dicyandiamide, guanylurea dinitramide and metal cyanamides.

8. Composition according to Claim 1, characterized in that it additionally comprises a ballistic catalyst chosen from the group consisting of titanium oxide, copper oxide, basic copper nitrate, copper chromite and iron oxide.

9. Composition according to Claim 1, characterized in that it additionally comprises a wetting agent

chosen from the group consisting of organosilanes, titanates and aziridines.

10. Process for the solvent-free continuous manufacture
5 in a twin-screw mixer-extruder (1) of pyrotechnic compositions according to any one of Claims 1 to 9, characterized in that:

10 - the twin-screw mixer-extruder (1) comprises a mixing and kneading compartment (2), a compression compartment (3) and an extrusion head (4), and in that

15 - the solid (A) and liquid (B) constituents are introduced into the mixing and kneading compartment (2) via two different feed openings, a feed opening for the solids and a feed opening for the liquids, in that they are, in this compartment, conveyed and kneaded, then, in that,
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- the homogeneous paste thus formed is degassed in the compression compartment (3) and then extruded, using an extrusion head (4), in the
25 form of rods (8) and, finally, in that,

- the rods thus formed (8) are cut up into charges (9) using a cutting device (10), and in that

these said charges (9) are crosslinked at a temperature of between 100°C and 150°C.

11. Process according to Claim 10, characterized in
5 that the nitrogenous organic compound and the gum are premixed and introduced into the mixing and kneading compartment (2) via the feed opening for the solids.

10 12. Process according to Claim 10, characterized in that the pressure in the compression compartment (3) is less than 50×10^3 Pa.

13. Process according to Claim 10, characterized in
15 that the temperature of the mixing and kneading compartment (2) is between 15°C and 75°C.

14. Process according to Claim 10, characterized in
20 that the pressure in the extrusion head (4) is between 6×10^6 Pa and 15×10^6 Pa.